



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

PROPOSED TRANSMITTER AND STUDIO LOCATIONS

Bryan proposes to operate from a site uniquely described by the geographic coordinates:

36° 07' 40" North Latitude

82° 37' 57" West Longitude

Figure E-4 is a portion of the Chuckey, Tennessee 7.5 minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. No FM or TV transmitters are located within 60 meters of the proposed antenna location. Since there are no other FM or TV facilities located nearby there is not expected to be any receiver induced intermodulation interference or other objectionable interference.

Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of Section 73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period.

The main studio for the station will be located in the TUSCULUM area, at a site yet to be determined.

The applicant proposes to install an emergency power system to ensure continued service during interruption of normal electrical service.



OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

COVERAGE CONTOURS

The three-to-sixteen-kilometer average terrain elevations were derived from the National Geophysical Data Center (NGDC) 30-second topography data base. However, the site elevation was determined from the U.S.G.S. 7.5 minute Chuckey topography quadrangle map.

The effective antenna radiation center height for each of the eight standard 45-degree spaced radials was used in conjunction with the F(50,50) metric curves of Figure 1 of Section 73.333 of the Rules to determine the distances to the 70 dBu and 60 dBu coverage contours. The contours drawn from the data are depicted on the map in figure E-5. As is readily evident, all of TUSCULUM, TENNESSEE is included within the proposed 70 dBu coverage contour as required by the rules. The radial drawn through the principal city is depicted on the profile plot in Engineering Exhibit E-7. This permitted a determination to be made that there are no major obstructions in the intervening path from the transmitter site to the principal community.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

POPULATION AND AREA DATA

Based on the 1990 U.S. Census of Population, the number of persons enclosed by the proposed 60 dBu coverage contour is 95,440 persons. The population count was made through the employment of a computer program containing a data base including the geographic coordinates of the centroids of population groupings. The area within the proposed 60 dBu coverage contour is 2,122 square kilometers. This area was determined by a computerized integration program.

ALLOCATION CONSIDERATIONS

A review of allotments and assignments on channel 276, on the three immediately upper adjacent, the three immediately lower adjacent channels, and on channels 223 and 222 (53 and 54 channels removed from channel 276), included as Engineering Exhibit E-8, showed that the site proposed would be in accordance with section 73.207 of the FCC Rules.



**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

ENVIRONMENTAL IMPACT STATEMENT

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.

3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for a single source. A search was made about the proposed site coordinates to locate any additional sources of RF radiation. No other sources were found.



**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

ENVIRONMENTAL CONSIDERATIONS CONTINUED

The power density at the base of the tower was calculated using the following formula from OST Bulletin Number 65, October, 1985:

$$S = \frac{(0.64)(1.64)(ERP)(1000)(\text{milliwatts/watt})}{(\pi(R)^2)}$$

where: S = power density in milliwatts per square centimeter
ERP = effective radiated power in watts
R = distance to radiation source in centimeters
 $\pi = 3.146$

Using this formula and the values shown below, a power density of 0.05 mW/cm² is found to exist at the base of the tower.

ERP = 12,000 watts
R = 8,700 cm.

The ANSI limit is 1.0 mW/cm². It is evident that any person at the base of the tower would be well within the ANSI exposure limit. Manipulating the above referenced formula, the minimum distance from the antenna required to achieve ANSI guidelines would be 21 meters.

Access to RF circuitry will be restricted. Signs will be posted warning of the potential danger. When persons require access to the tower for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

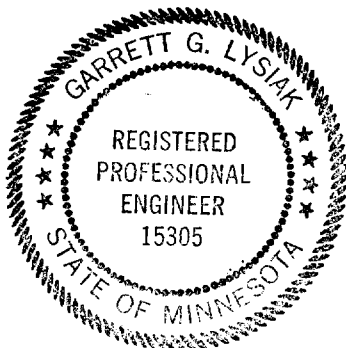
**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

CONCLUSIONS

Based on the engineering studies provided, the following conclusions can be obtained:

- (1) Implementation of the instant proposal will provide TUSCULUM with a full time aural broadcast service.
- (2) 95,440 persons in 2,122 square kilometers would have an available signal strength of 60 dBu or greater from the proposed construction location.
- (3) All of TUSCULUM would be served with a signal of 70 dBu or greater from the proposed construction site.
- (4) The proposal is in complete conformance with all technical rules of the Federal Communications Commission.



Garrett G. Lysiak

Garrett G. Lysiak, P.E.

December 23, 1991

Section V-B - FM BROADCAST ENGINEERING DATA	FOR COMMISSION USE ONLY File No. _____ ASB Referral Date _____ Referred by _____
--	--

Name of Applicant

DARRELL BRYAN

Call letters (if issued)

Is this application being filed in response to a window? ☒ Yes ☐ No

If Yes, specify closing date: January 23, 1992

Purpose of Application: (check appropriate boxes)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Construct a new (main) facility | <input type="checkbox"/> Construct a new auxiliary facility |
| <input type="checkbox"/> Modify existing construction permit for main facility | <input type="checkbox"/> Modify existing construction permit for auxiliary facility |
| <input type="checkbox"/> Modify licensed main facility | <input type="checkbox"/> Modify licensed auxiliary facility |

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

- | | |
|---|--|
| <input type="checkbox"/> Antenna supporting-structure height | <input type="checkbox"/> Effective radiated power |
| <input type="checkbox"/> Antenna height above average terrain | <input type="checkbox"/> Frequency |
| <input type="checkbox"/> Antenna location | <input type="checkbox"/> Class |
| <input type="checkbox"/> Main Studio location | <input type="checkbox"/> Other (Summarize briefly) |

File Number(s) DOC 90-587

1. Allocation:

Channel No.	Principal community to be served:			Class (check only one box below)
	City	County	State	
276	Tusculum,	Greene	TN	<input checked="" type="checkbox"/> A <input type="checkbox"/> B1 <input type="checkbox"/> B <input type="checkbox"/> C3 <input type="checkbox"/> C2 <input type="checkbox"/> C1 <input type="checkbox"/> C

2. Exact location of antenna.

(a) Specify address, city, county and state. If no address, specify distance and bearing relative to the nearest town or landmark.

9.4 km from Bethany, TN, at a bearing of 240.9°.

(b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude 36 ° 07 ' 40 "	Longitude 82 ° 37 ' 57 "
---	--

8. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? ☐ Yes ☒ No

If Yes, give call letter(s) or file number(s) or both. _____

If proposal involves a change in height of an existing structure, specify existing height above ground level including antenna, all other appurtenances, and lighting, if any. _____

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates?
If Yes, list old coordinates.

☐ Yes ☒ No

Latitude	0	Longitude	0
----------	---	-----------	---

5. Has the FAA been notified of the proposed construction?

☒ Yes ☐ No

If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. E-1

Date December 23, 1991 office where filed Southern Regional Office

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

Landing Area	Distance (km)	Bearing (degrees True)
(a) <u>N/A</u>		
(b)		

7. (a) Elevation: (to the nearest meter)

(1) of site above mean sea level; 512 meters

(2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and 92.4 meters

(3) of the top of supporting structure above mean sea level [(aX1) + (aX2)] 604.4 meters

- (b) Height of radiation center: (to the nearest meter) H = Horizontal; V = Vertical

(1) above ground 87 meters (H)

87 meters (V)

(2) above mean sea level [(aX1) + (bX1)] 599 meters (H)

599 meters (V)

(3) above average terrain -68 meters (H)

-68 meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(b)(3). If mounted on an AM directional-array element, specify heights and orientations of all array towers, as well as location of FM radiator.

Exhibit No. E-2

9. Effective Radiated Power:

- (a) ERP in the horizontal plane

6.0 kw (H) 6.0 kw (V)

- (b) Is beam tilt proposed?

☐ Yes ☒ No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

--- kw (H) --- kw (V)

Exhibit No. N/A

*Polarization

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 3)

10. Is a directional antenna proposed?

☐ Yes ☒ No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.816, including plot(s) and tabulations of the relative field.

Exhibit No.
N/A

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.815(a) and (b)?

☒ Yes ☐ No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 616 mV/m service.

Exhibit No.
N/A

12. Will the main studio be within the protected 616 mV/m field strength contour of this proposal?

☒ Yes ☐ No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125.

Exhibit No.
N/A

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207?

☒ Yes ☐ No

(b) If the answer to (a) is No, does 47 C.F.R. Section 73.218 apply?

☐ Yes ☐ No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of previous waivers.

Exhibit No.
N/A

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.

Exhibit No.
N/A

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.
N/A

- (1) Protected and interfering contours, in all directions (360°), for the proposed operation.
- (2) Protected and interfering contours, over pertinent area, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.
- (3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
- (4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (5) The official title(s) of the map(s) used in the exhibit(s).

14. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast (except citizens band or amateur) radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference?

☒ Yes ☐ No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. (See 47 C.F.R. Sections 73.315(b), 73.316(a) and 73.318.)

Exhibit No.
E-3

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No.
E-4

16. Attach as an Exhibit *(name the source)* a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.
E-5

JOHNSON CITY MAP, SCALE 1:250,000

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 816 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 259 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 2,122 sq. km. Population 95,440

18. For an application involving an auxiliary facility only, attach as an Exhibit a map *(Sectional Aeronautical Chart or equivalent)* that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.
N/A

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data *(to be calculated in accordance with 47 C.F.R. Section 73.313)*

Source of terrain data: *(check only one box below)*

☒ Linearly interpolated 90-second database ☐ 7.5 minute topographic map

(Source: NGDC)

☐ Other *(briefly summarize)*

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 8 to 16 km (meters)	Predicted Distances	
		To the 0.16 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
"	157	20.5	34.8
0	146	19.8	33.6
45	121	18.0	30.9
90	-175	9.0	15.9
135	-295	9.0	15.9
180	-417	9.0	15.9
225	-234	9.0	15.9
270	162	20.8	35.4
315	149	19.9	33.9

*Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT.

*294.9°

20. Environmental Statement/See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? ☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

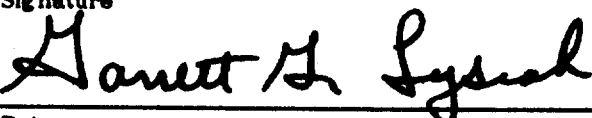
Exhibit No.
E-6

If No, explain briefly why not.

Please See Engineering Statement

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

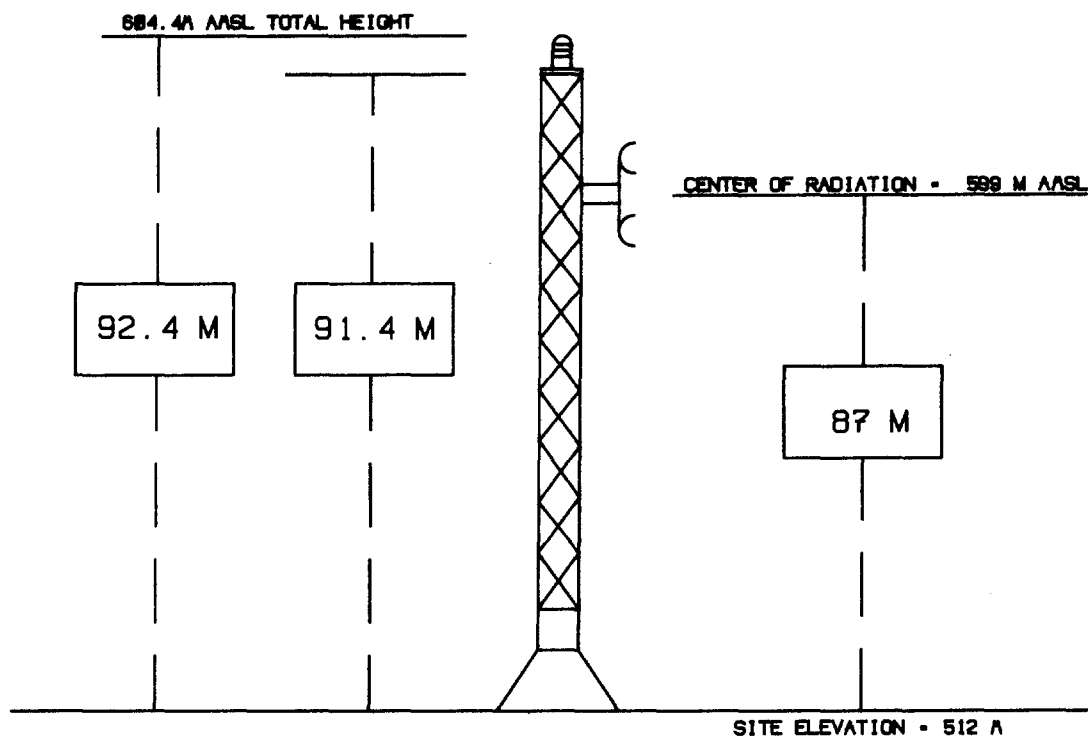
Name (Typed or Printed)	Relationship to Applicant (e.g., Consulting Engineer)
Garrett G. Lysiak	Registered Professional Engineer
Signature	Address (Include ZIP Code)
	Owl Engineering, Inc. 1306 W County Road F, Ste 105 Arden Hills, MN 55112
Date	Telephone No. (Include Area Code)
December 23, 1991	(612) 631-1338

ENGINEERING EXHIBIT E-1

DO NOT REMOVE CARBONS

Form Approved OMB No 2120-0001

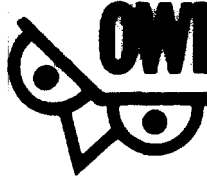
NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION			Aeronautical Study Number																
1. Nature of Proposal <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;"> A. Type <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration </td> <td style="width: 33%; vertical-align: top;"> B. Class <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (Duration _____ months) </td> <td style="width: 33%; vertical-align: top;"> C. Work Schedule Dates Beginning <u>As per FCC</u> End <u>approval</u> </td> </tr> </table>			A. Type <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration	B. Class <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (Duration _____ months)	C. Work Schedule Dates Beginning <u>As per FCC</u> End <u>approval</u>	2. Complete Description of Structure A. Include effective radiated power and assigned frequency of all existing, proposed or modified AM, FM, or TV broadcast stations utilizing this structure. B. Include size and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports. C. Include information showing site orientation, dimensions, and construction materials of the proposed structure. A) 6 KW ERP(H&V) 103.1MHz. B) Does not apply. C) Uniform cross section steel guyed tower with a side mounted FM antenna. <i>(If more space is required, continue on a separate sheet.)</i>													
A. Type <input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Alteration	B. Class <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary (Duration _____ months)	C. Work Schedule Dates Beginning <u>As per FCC</u> End <u>approval</u>																	
3A. Name and address of individual, company, corporation, etc. proposing the construction or alteration. (Number, Street, City, State and Zip Code) <u>(615) 639-4501</u> area code Telephone Number <div style="border: 1px solid black; padding: 5px; margin: 5px;"> Darrell Bryan 1204 Christy Court Greeneville, TN 37743 </div>			5. Height and Elevation (Complete to the nearest foot) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">A. Elevation of site above mean sea level</td> <td style="width: 50%; text-align: center;">1680</td> </tr> <tr> <td>B. Height of Structure including all appurtenances and lighting (if any) above ground, or water if so situated</td> <td style="text-align: center;">303</td> </tr> <tr> <td>C. Overall height above mean sea level (A + B)</td> <td style="text-align: center;">1983</td> </tr> </table>		A. Elevation of site above mean sea level	1680	B. Height of Structure including all appurtenances and lighting (if any) above ground, or water if so situated	303	C. Overall height above mean sea level (A + B)	1983									
A. Elevation of site above mean sea level	1680																		
B. Height of Structure including all appurtenances and lighting (if any) above ground, or water if so situated	303																		
C. Overall height above mean sea level (A + B)	1983																		
3B. Name, address and telephone number of proponent's representative if different than 3 above. Garrett G. Lysiak Owl Engineering, Inc. 1306 W County Road F, Ste 105 Arden Hills, MN 55112 (612)631-1338			4. Location of Structure <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">A. Coordinates (To nearest second)</td> <td style="width: 33%;">B. Nearest City or Town, and State</td> <td style="width: 33%;">C. Name of nearest airport, heliport, flightpark, or seaplane base</td> </tr> <tr> <td style="text-align: center;">36° 07' 40"</td> <td style="text-align: center;">Bethany, TN</td> <td style="text-align: center;">GCY</td> </tr> <tr> <td style="text-align: center;">Latitude</td> <td>(1) Distance to 4B 5.8 miles Miles</td> <td>(1) Distance from structure to nearest point of nearest runway 9.7732</td> </tr> <tr> <td style="text-align: center;">82° 37' 57"</td> <td>(2) Direction to 4B 240.9°</td> <td>(2) Direction from structure to airport 293.27°</td> </tr> <tr> <td style="text-align: center;">Longitude</td> <td></td> <td></td> </tr> </table>		A. Coordinates (To nearest second)	B. Nearest City or Town, and State	C. Name of nearest airport, heliport, flightpark, or seaplane base	36° 07' 40"	Bethany, TN	GCY	Latitude	(1) Distance to 4B 5.8 miles Miles	(1) Distance from structure to nearest point of nearest runway 9.7732	82° 37' 57"	(2) Direction to 4B 240.9°	(2) Direction from structure to airport 293.27°	Longitude		
A. Coordinates (To nearest second)	B. Nearest City or Town, and State	C. Name of nearest airport, heliport, flightpark, or seaplane base																	
36° 07' 40"	Bethany, TN	GCY																	
Latitude	(1) Distance to 4B 5.8 miles Miles	(1) Distance from structure to nearest point of nearest runway 9.7732																	
82° 37' 57"	(2) Direction to 4B 240.9°	(2) Direction from structure to airport 293.27°																	
Longitude																			
D. Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). <i>(If more space is required, continue on a separate sheet of paper and attach to this notice.)</i> <div style="text-align: center; font-size: 1.2em;">5.8 miles from Bethany, TN, at a bearing of 240.9°.</div>																			
<p><small>Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than \$500 for the first offense and not more than \$2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).</small></p>																			
I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.																			
Date	Typed Name/Title of Person Filing Notice		Signature																
12/23/91	Garrett G. Lysiak, PE																		



OWL ENGINEERING, INC.
ENGINEERING EXHIBIT E-2

TUSCULUM, TN
NOT TO SCALE

CHANNEL 276A



OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-3
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

PROPOSED TRANSMITTER AND STUDIO LOCATIONS

Bryan proposes to operate from a site uniquely described by the geographic coordinates:

36° 07' 40" North Latitude

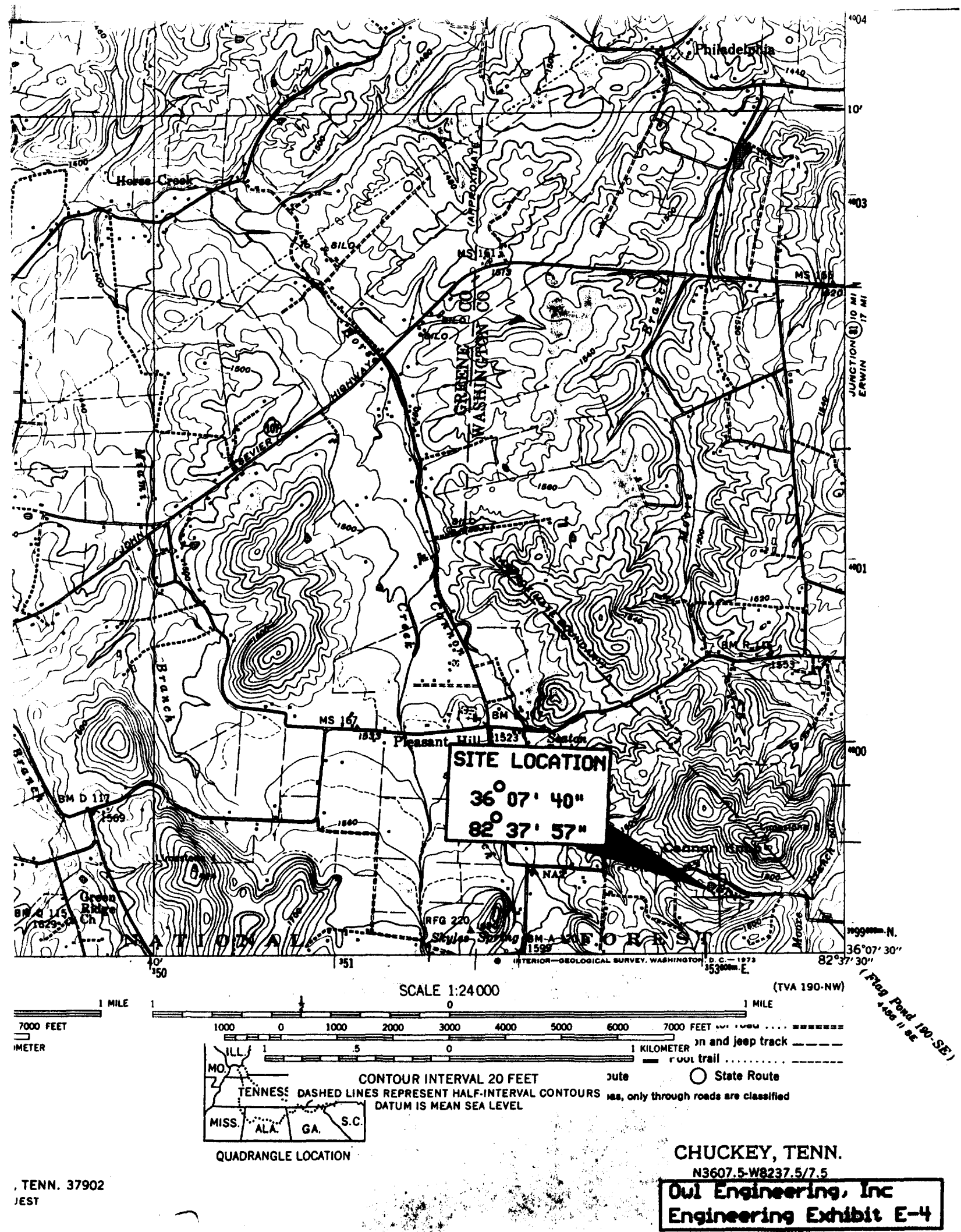
82° 37' 57" West Longitude

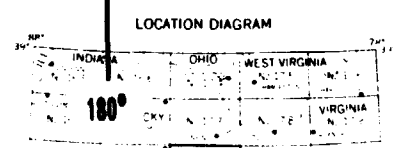
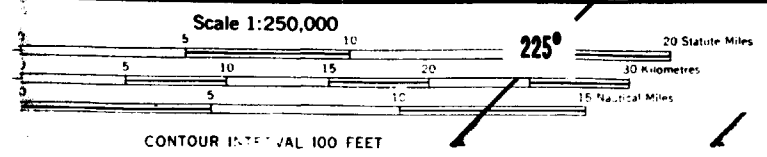
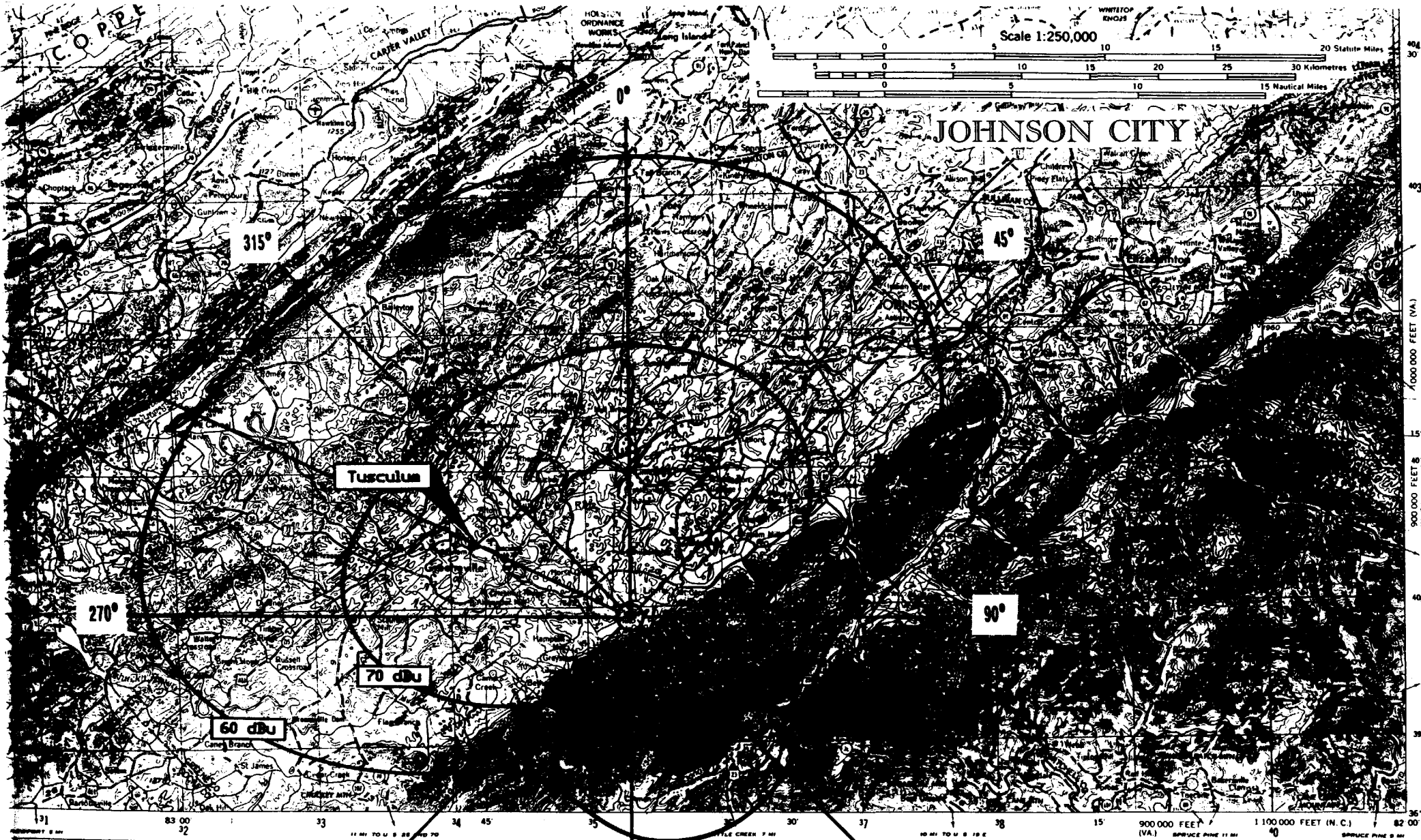
Figure E-4 is a portion of the Chuckey, Tennessee 7.5 minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. No FM or TV transmitters are located within 60 meters of the proposed antenna location. Since there are no other FM or TV facilities located nearby there is not expected to be any receiver induced intermodulation interference or other objectionable interference.

Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of Section 73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period.

Figure E-2 is a sketch showing important elevations for the antenna and its supporting structure at the proposed construction site.

The main studio for the station will be located in the TUSCULUM area, at a site yet to be determined.





INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA-1

GRID ZONE DESIGNATION 17S	TO HAVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST GRID METER
100,000 M SQUARE IDENTIFICATION	SHEET NUMBER
KL	Dul Engineering, Inc Engineering Exhibit E-5
DATE	BY



**ENGINEERING EXHIBIT E-6
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

ENVIRONMENTAL IMPACT STATEMENT

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.

3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for a single source. A search was made about the proposed site coordinates to locate any additional sources of RF radiation. No other sources were found.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-6
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

ENVIRONMENTAL CONSIDERATIONS CONTINUED

The power density at the base of the tower was calculated using the following formula from OST Bulletin Number 65, October, 1985:

$$S = \frac{((0.64)(1.64)(ERP)(1000)(\text{milliwatts/watt}))}{(\pi(R)^2)}$$

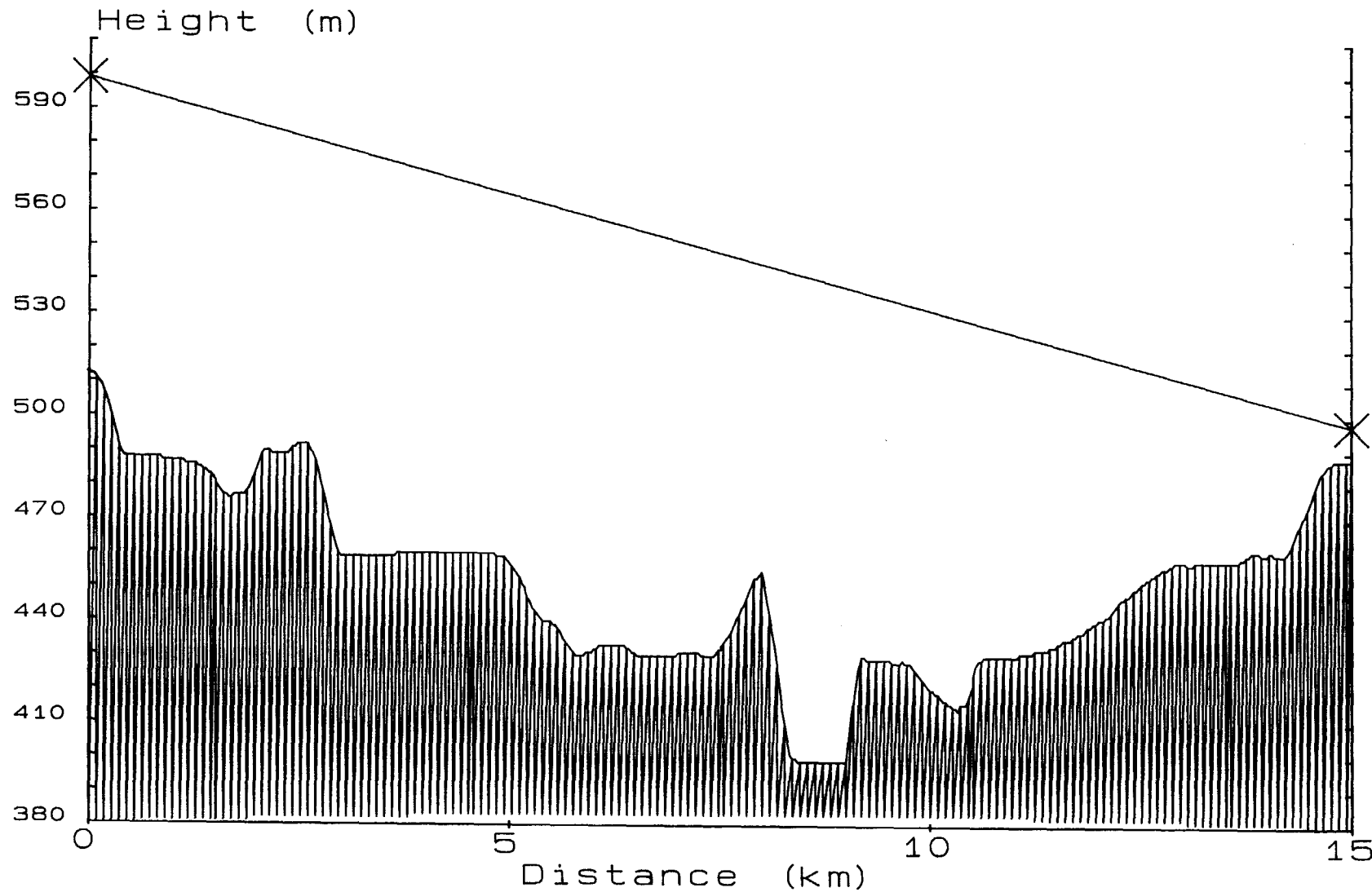
where: S = power density in milliwatts per square centimeter
ERP = effective radiated power in watts
R = distance to radiation source in centimeters
 $\pi = 3.146$

Using this formula and the values shown below, a power density of 0.05 mW/cm² is found to exist at the base of the tower.

ERP = 12,000 watts
R = 8,700 cm.

The ANSI limit is 1.0 mW/cm². It is evident that any person at the base of the tower would be well within the ANSI exposure limit. Manipulating the above referenced formula, the minimum distance from the antenna required to achieve ANSI guidelines would be 21 meters.

Access to RF circuitry will be restricted. Signs will be posted warning of the potential danger. When persons require access to the tower for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.



Profile Study for Tusculum, TN

Owl Engineering, Inc.
1306 W. County Rd. F

Saint Paul, Minnesota
(612) 631-1338

Engineering Exhibit E-7



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-8
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

CHANNEL SPACING STUDY

FM Channel 276-A

LATITUDE: 36° 7' 40"
LONGITUDE: 82° 37' 57"

CHNL Call	City	Class	Calculated Km.	Required Km.	Delta km.	Bearing °
222	NO CONFLICT					
223	NO CONFLICT					
273 WMYI	FMNC Hendersonville	C1	100.69	75	25.69	175.70
273	FANC Hendersonville	C1	100.69	75	25.69	175.70
274	NO CONFLICT					
275	FANC Hickory	C1	157.67	133	24.67	120.14
275 WEZC	FMNC Hickory	C1	157.67	133	24.67	120.14
276 WRAU	FMKY Elkhorn City	A	128.85	115	13.85	10.76
276	FATN Etowah	C2	188.22	166	22.22	246.77
276 WDRZFM	FMTN Etowah	C2	199.40	166	33.40	248.58
276	FAKY Elkhorn City	A	128.85	115	13.85	10.76
276	FRTN Tusculum	A	7.00	115	-108.00	330.82
277 NEW	FMNC Lenoir	A	96.80	72	24.80	99.63
277 NEW	FMNC Lenoir	A	96.27	72	24.27	97.34
277 NEW	FMNC Lenoir	A	98.49	72	26.49	99.75
277 NEW	FMNC Lenoir	A	99.05	72	27.05	99.58
277 NEW	FMNC Lenoir	A	98.87	72	26.87	99.58
277	FANC Lenoir	A	97.55	72	25.55	99.59
277 NEW	FMNC Lenoir	A	96.66	72	24.66	98.23
278	FATN Knoxville	C	98.32	95	3.32	270.79
278 WIMZFM	FMTN Knoxville	C	98.32	95	3.32	270.79
279	NO CONFLICT					

OWI, INC.

ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR
APPLICATION FOR FM CONSTRUCTION PERMIT
DARRELL BRYAN
TUSCULUM, TENNESSEE**

CHANNEL 276 6 KW -68 METERS

AFFIDAVIT

RAMSEY COUNTY

ss:

STATE OF MINNESOTA

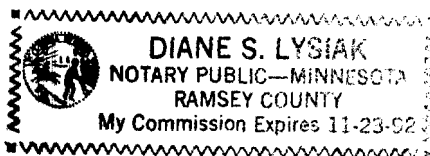
Garrett G. Lysiak, being first duly sworn, says that he is president of Owl Engineering, Inc., consulting communications engineers with offices in Arden Hills, Minnesota; that his qualifications as an expert in communications engineering are a matter of record with the Federal Communications Commission; that the foregoing exhibit was prepared by him and under his direction; and that the statements contained therein are true of his own personal knowledge except those stated to information and belief and, as to those statements, verily believes them to be true and correct.



Garrett G. Lysiak

Garrett G. Lysiak, P.E.

Subscribed and sworn to before me this date December 23, 1991.



Diane S. Lysiak

Diane S. Lysiak
Notary Public

My commission expires November 23, 1992